

**DILATED CARDIOMYOPATHY IN PATIENTS OF DIFFERENT AGE GROUPS
DIAGNOSTIC AND TREATMENT FEATURES**

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Annotation: Dilated cardiomyopathy (DCM) is a severe myocardial disorder characterized by progressive dilation and dysfunction of the left ventricle, ultimately leading to heart failure. This article examines the age-related features of the manifestation, diagnosis, and treatment of DCM. The study is based on an analysis of data from 200 patients divided into three age groups. Key diagnostic markers are highlighted, including echocardiographic parameters and laboratory findings, as well as specific treatment approaches utilizing modern therapeutic strategies. Particular attention is paid to the individualization of treatment based on age and the presence of comorbidities.

Keywords: Dilated cardiomyopathy, heart failure, age groups, diagnosis, treatment.

Relevance: Dilated cardiomyopathy (DCM) is a critical condition of the myocardium characterized by an enlargement and impaired contractility of the left ventricle, resulting in chronic heart failure. This condition poses significant challenges for diagnosis and management, particularly given its progressive nature. The article delves into the age-related clinical manifestations, diagnostic methods, and treatment strategies of DCM. Data from 200 patients, categorized into three distinct age groups, were thoroughly analyzed. The research focuses on vital diagnostic tools such as echocardiographic assessments, laboratory biomarkers, and their role in understanding disease progression. Modern treatment modalities, including pharmacological and non-pharmacological approaches, are reviewed with an emphasis on tailoring therapies to individual patient profiles, considering their age and coexisting medical conditions. This targeted approach is crucial to improving patient outcomes and addressing the complex needs of diverse age groups.

Objective of the Study: To identify the clinical features, diagnostic challenges, and treatment strategies of dilated cardiomyopathy in patients across different age groups, with a focus on enhancing therapeutic outcomes through personalized care.

Materials and Methods: This study involved an in-depth analytical review of 200 medical records of patients diagnosed with dilated cardiomyopathy (DCM), a progressive cardiac pathology that can lead to heart failure and other severe complications. The primary inclusion criterion was a confirmed diagnosis of DCM based on clinical evaluations and instrumental examinations. Participants were required to be over 18 years old and to provide voluntary informed consent for inclusion in the research, adhering to ethical standards and recommendations.

Key exclusion criteria included acute conditions such as myocardial infarction, severe comorbidities like advanced-stage oncological diseases, and insufficient diagnostic data that could compromise the accuracy and reliability of the findings. Excluding such cases ensured the homogeneity of the study group and minimized potential data biases.

The cohort of 200 patients was divided into three age groups for a comprehensive analysis of clinical and diagnostic data. The first group included young patients aged 18 to 45 years, the second group consisted of middle-aged patients (46 to 65 years), and the third group comprised elderly patients above 66 years. This stratification allowed for an evaluation of the influence of age on the

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development and progression of DCM, as well as the effectiveness of various treatment modalities across different age categories.

Modern diagnostic tools were utilized to assess the condition. Echocardiographic examinations, including detailed evaluations of left ventricular ejection fraction and volume, provided precise insights into the cardiac status of each patient. Laboratory tests included measurements of natriuretic peptide levels, a key marker of heart failure, and creatinine levels to detect potential renal dysfunction. Additionally, exercise tolerance tests were employed to assess the functional state of the cardiovascular system and the body's capacity to adapt to physical activity.

Pharmacological therapies prescribed to patients were evaluated based on treatment regimens, drug dosages, and the frequency of adverse effects. The effectiveness of treatment was analyzed by examining its impact on key clinical and laboratory indicators, as well as on the patients' quality of life.

This comprehensive approach to studying DCM across different age groups provided a detailed understanding of its prevalence and management. The findings aim to contribute to the development of tailored therapeutic strategies, considering the patient's age and disease stage, thus optimizing treatment outcomes and improving patient care.

Study Results: The study analyzed 200 patients diagnosed with dilated cardiomyopathy (DCM), categorized into three age groups to assess clinical presentations, diagnostic findings, and treatment outcomes.

1. Young Adults (18–45 years):

- **Etiology:** DCM in this group was predominantly associated with genetic mutations and myocarditis.
- **Cardiac Function:** Patients exhibited relatively preserved left ventricular ejection fractions (LVEF), averaging around 40%, indicating better systolic function compared to older cohorts.
- **Compensatory Mechanisms:** Myocardial hypertrophy was more pronounced, serving as a temporary compensatory response to maintain cardiac output.

2. Middle-Aged Adults (46–65 years):

- **Etiology:** Ischemic heart disease and metabolic disorders, such as type 2 diabetes mellitus and obesity, were more prevalent in this group.
- **Cardiac Function:** LVEF decreased to approximately 30–35%, with a 20% increase in left ventricular volume compared to normal values, indicating progressive ventricular dilation and systolic dysfunction.
- **Case Example:** A patient with type 2 diabetes exhibited significant diastolic dysfunction, complicating the management strategy.

3. Older Adults (66 years and above):

- **Clinical Presentation:** This cohort experienced advanced heart failure symptoms, reduced exercise tolerance, and a high prevalence of comorbidities.
- **Comorbidities:** Chronic kidney disease and hypertension were present in 60% of patients, necessitating adjustments in standard therapeutic approaches.
- **Cardiac Function:** Echocardiography revealed a 30% increase in left ventricular volume and a reduction in LVEF to 25%, reflecting severe systolic impairment.

Treatment Outcomes Across Age Groups:

- **Pharmacotherapy:** The regimen included angiotensin-converting enzyme inhibitors, β -blockers, and mineralocorticoid receptor antagonists. While effective across all age groups, older patients exhibited a higher incidence of adverse effects.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

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• Adverse Effects: Hyperkalemia occurred in 40% of patients over 65, requiring dosage adjustments to mitigate risks.

Conclusions: DCM manifests with distinct age-related clinical features, diagnostic challenges, and therapeutic responses. In younger patients, emphasis should be placed on genetic predispositions and inflammatory etiologies. Conversely, management in middle-aged and older adults should focus on controlling comorbid conditions and metabolic disturbances. Implementing individualized diagnostic and therapeutic strategies enhances treatment efficacy and improves patient quality of life.

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